Improving Blueberry Propagation in the Tissue Culture Green House Stage using Rhizopon AA Water Soluble Tablets

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INTRODUCTION

Blueberry Tissue Culture (TC) plantlets are often bushier, with heavier cane diameter, increased lateral branching, and higher flower production than those propagated from cuttings. Cuttings are taken from the TC propagated plantlets. The next stage plants pass on the favorable characteristics, resulting in higher fruit production.

HOW THE PLANTLETS ARE PRODUCED

Tissue culture stages:

Stage I

This stage is under sterile laboratory conditions. The growing points of the plant, such as a shoot tips or buds, are excised from the stock plant and placed into a growth medium where they develop into a tiny plantlets.

Stage II

Plantlets are transferred into a different growth medium containing plant hormones that will encourage the plantlets to produce more plantlets. In this stage, the number of plantlets increase through a series of transfers to fresh medium. This process continues until the desired number of plantlets is produced.

Stage Ill

Plantlets are transferred to another different medium that will prepare them for transfer to a greenhouse environment.

Stage IV

Plantlets are removed from stage Ill medium and planted in a greenhouse. There they root and acclimate to the greenhouse environment.

Greenhouse Production

Stage IV plantlets are rooted, acclimated, and grown on to a field-ready plug plant. This process takes 8 - 12 weeks. These plug plants are the foundation stock for field production.

The Greenhouse Production lighting looks like a TC growth room. Domes are used because the cuttings are very soft and require good environmental control. Cuttings used are usually from the top of the stock plants. Lower cuttings, with no top but three leaves, are also used.



ENHANCEMENT METHOD:

The Stage IV plantlet cuttings are totally immersed, about 5 seconds, in an aqueous solution containing Rhizopon AA Water Soluble Tablets at 1-3 tablets per liter of water (the solution contains 50-150 ppm K-IBA). A plastic small screen basket is used to dip the cuttings so as not to cause damage to the tender plant tissue.



The plantlets are stuck in 325 trays (or other sizes suitable for production).





The trays are then covered with transparent domes.



The plantlets are kept under artificial light such as those used in TC labs. To control lowering of humidity, after about 2-3 weeks the plantlets are moved to a greenhouse to harden off. In the greenhouse the plantlets also utilize the broad spectrum of natural sunlight.



